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**A COMPILATION OF HISTORICAL SOCKEYE SALMON SPAWNING
ESCAPEMENT ESTIMATES FROM PRINCE WILLIAM SOUND**

By:
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January 1981

ALASKA DEPARTMENT OF FISH AND GAME
Support Building, Juneau, Alaska 99801

Ronald O. Skoog
Commissioner

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Data presented in these reports is intended to be final, however, some revisions may occasionally be necessary. Minor revision will be made via errata sheets. Major revisions will be made in the form of revised reports.

A COMPILATION OF HISTORICAL SOCKEYE SALMON
SPAWNING ESCAPEMENT ESTIMATES FROM PRINCE WILLIAM SOUND

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PREFACE

The intent of this report is to consolidate, under one cover, annual aerial and ground spawning escapement estimates and weir counts of sockeye salmon from Prince William Sound systems.

INTRODUCTION

This report presents all the known historical weir count data since inception of the fishery and comparable aerial and ground count spawning escapement data since 1960¹ for the Prince William Sound districts. The data, in tabular form, consists of: 1) aerial and ground spawning escapement estimates, 2) combination weir - tower counts, and 3) weir counts of sockeye salmon.

The purpose of the report is to provide a single data source for managers and other interested persons.

Aerial escapement survey (very few ground surveys were made) data is listed separately for each sockeye spawning system by date of survey. The peak count is used as the total estimated escapement.

A combination weir - tower was used at Coghill River from 1961 through 1973 from which only estimates of total escapement were obtained. After 1973 a standard weir was installed which produced total escapement counts. The counts for Coghill River are listed by year, by date, and for the year.

Esham River and Jackpot River weir counts were obtained from a standard weir and represent total escapement unless otherwise noted. The counts are listed by year, by date, and total for the year.

Sockeye spawning escapement weir counts prior to statehood are available only for Esham River and for one year for Jackpot River. Since statehood weir counting was expanded to include Coghill River, and for a few years at Shrode Creek. Also, aerial surveys have been conducted since statehood on all known sockeye systems for some years.

Pre-statehood data is from U.S. Fish and Wildlife Service, Bureau of Commercial Fisheries, Annual Management Reports of Agents. From 1960 on, the data is from Alaska Department of Fish and Game, Commercial Fisheries Division, Annual Management Reports and other unpublished data files.

Counts of sockeye salmon by day and year by aerial methods for each sockeye system are shown in Appendix A. Daily weir and weir - tower counts of sockeye salmon by day and year are shown in Appendix B.

METHODS AND MATERIALS

Aerial Surveys

Prince William Sound has twelve sockeye salmon spawning systems that are known to have annual migrations of sockeye. One of these, San Juan Lake on

¹ For aerial and ground survey data prior to 1960 interested persons are referred to the Stream Catalog of Prince William Sound Streams, 1978, Alaska Department of Fish and Game, Unpublished Data Report No. 11 to 17.

the southern end of Montague Island, has been dewatered due to uplift caused by the 1964 earthquake. All of the systems have been periodically surveyed from the air since 1960 with the exception of Eshamy Lake system where a permanent weir has been maintained. Some of the sockeye lake systems have been surveyed only once or infrequently while others have been surveyed on a regular basis.

Aerial survey methods and materials are generally as described in Alaska Department of Fish and Game, Prince William Sound Management Area, Data Report No. 9, September 1977. Sockeye salmon are counted in both the lake and in the lake outlet stream. Counting in lakes is done by making one complete circuit of the lake and totals recorded on the aerial survey form. Only the peak count is used from the aerial survey form and the other data remains in original note files.

Weir - Tower Counts

Prior to 1974 the counting of sockeye escapement in Coghill River was accomplished by a combination of a weir and tower. A weir was constructed of wire mesh over a portion of the stream in a manner to divert sockeye and other salmon over a light colored material placed on the stream bottom. Actual counting was done from a (20 ft) tower placed on an island near the "counting board". Counting was done systematically for several periods during daylight hours with resulting counts being only an index of total escapement. The counting season varied from early June and early July until mid or late July depending upon funds and environmental conditions. Daily counts by species were recorded by time period in a field notebook, "J.L. Darling Corp., Rite in the Rain, Level Notebook No. 311".

Weir Counts

Standard weighted tripod-type weirs constructed of wood with a counting gate have been used in Eshamy River since 1931 and in Coghill River since 1974. Conduit pickets have replaced wooden pickets used prior to 1975 in the Eshamy weir and conduit pickets are used in the Coghill River weir. Total escapement by species is obtained at the weir by periodic opening of the gate and counting the salmon as they pass through the weir. The gate was kept in a closed position except when counting was being conducted. Daily counts, by species, were recorded in a field notebook (see weir - tower counts) and later recorded in a second field notebook to prevent a loss of records. Counts from field notebooks were later recorded in annual management reports and the notebooks filed.

The counting season at Coghill River weir has ranged from early and late June to early July and early August depending upon funds and other factors. Counting at Eshamy River weir has begun as early as 10 June and terminated as late as 26 September depending primarily on available funds.

Sockeye counts at Shrode Creek were made at a concrete dam provided with two removable gates. Counting at Shrode Creek was done by removing a gate and allowing salmon to move upstream. The gates remained closed between counting periods.

ACKNOWLEDGMENTS

The author wishes to acknowledge W.H. "Wally" Noerenberg and Robert S. Roys who assisted in the collection of data during statehood years. To J. David Solf (deceased), a personal friend and co-worker, who spent several years at Eshamy River weir. Also, to the many others who assisted in weir counts.

To Mrs. Jeannette Bailey for the tedious task of typing and editing of the report.

APPENDIX A

Sockeye salmon escapement estimate by lake spawning system, by date of survey, by year, and estimated season total.

Appendix Table 1. Bainbridge Lake, No. 630, aerial survey estimate of sockeye salmon by survey date and year^{1/}.

Date	1960 ^{2/}	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
6/30																		
7/ 7																		
7/10																		
7/14																		
7/15	300																	
7/18																		
7/20																		
7/21			80															0
7/22																		
7/23																		
7/24																		
7/25																		
7/28				300		850+												
7/29			1900															
8/ 1																		
8/ 2	400																	
8/ 3																		
8/ 4					25													
8/ 5																		
8/ 7																		
8/ 8																		
8/10																		
8/11			900	450	1325													
8/12						500												
8/13																		
8/14																		
8/17			2000															
8/18				300														
8/19																		
8/24																		
Est. Season																		
Total ^{6/}	400	2000	900	450	1325	500	1000	100	300	500	600	200	1500	600	250	350	400	500

^{1/} From Alaska Department of Fish and Game, Commercial Fisheries unpublished file.

^{2/} No survey made in years not shown. ^{3/} Some sockeye indicated, but no number established.

^{4/} Lakes frozen over on this date. ^{5/} Lower lake mostly frozen over on this date.

^{6/} Peak count used as season total.

Appendix Table 2. Billy's Hole Lake, No. 218, aerial survey estimate of sockeye salmon by survey date and year^{1/}.

Date	1960 ^{2/}	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
6/28		200																0
7/ 8										1000*	0	200*						
7/11																		
7/13		3050**		300				1500										1100
7/15		220																50
7/17																		
7/18												300						50
7/22																		2000
7/23																		
7/24									500									
7/26		2500									400		0					
7/29		3000	800	200									0					3600
8/ 2																		
8/ 3									1100***			300						200
8/ 4																		200
8/11																		
8/14																		
8/16																		
8/25																		
8/31																		
9/ 1		0		500														
Est. Season Total	3/	220	3050	1000	700	2400	1000	1500	500	400	300	0	0	200	50	50	200	3600
																		100

1/ From Alaska Department of Fish and Game, Commercial Fisheries, unpublished data file. 2/ No survey made in years not shown. * Count of sockeye below the steep pass ladder (falls). ** Estimated 3000 sockeye below the steep pass ladder and 50 in the lake. *** Estimated 300 sockeye below the steep pass ladder and 800 in the lake.

Bay of Isles Lake, No. 687, aerial survey estimate of sockeye salmon on 8/27/73. 1/

On 8/27/73 an aerial survey made of the lake shore area revealed a few (less than 10) sockeye salmon.

1/ From Alaska Department of Fish and Game, Commercial Fisheries, unpublished data file.

Appendix Table 3. Coghill Lake, No. 322, aerial survey estimate of sockeye salmon by survey date and year^{1/}.

Date	1960 ^{2/}	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
6/17									0									
6/23									2080									
6/29	6500	300							15200								6000*	
7/ 1																		500
7/ 2																		
7/ 7				300						700						10700		
7/ 8																	4400	
7/ 9	10000																	
7/10															10000			
7/12																27600		
7/13	15000	10000+		16000					70000									
7/16									85000									
7/17																		
7/18																50000		
7/22	50000															26000		
7/23																	7600	
7/24																		
7/25				22200														
7/26			1000	90000					85000									
8/ 1																		
8/ 2																		
8/ 3	0				40000													
8/ 6																	21000	
8/ 7																	55000	
8/ 9			1700		13800					33000								
8/18						17400												
8/28						18950											10500	
9/ 1						9500												
9/11																		
Est. Season		10000		90000		85000		33000		72000		20700		55000		10500		
Total 3/	50000		9500		22200		85000		11800		41000		51000		21000		500	

1/ From Alaska Department of Fish and Game, Commercial Fisheries, unpublished data file. 2/ No survey made in years not shown. 3/ Peak count used as season total. * Sockeye counted in Coghill River.

Appendix Table 4. Jackpot Lake, No. 608, aerial survey estimate of sockeye salmon by survey date and year^{1/}.

Date	1960 ^{2/}	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
6/23				0														
6/30	500			50														
7/ 7			0															
7/ 9																800**		
7/10								700										
7/15	2500										300						500	
7/18												0						
7/23					0							0				4000		
7/25				5500							1000							
7/28		500	800															7000
7/29	2900											5500*						
8/ 1													300					
8/ 2		300																
8/ 3																		
8/ 8													5500					
8/10																	1000	
8/12							2000										250	
8/17		1800																
8/27													300+					
8/28																	3000	
Est. Season Total ^{3/}	2500	2900	500	800	5500	2000		700		1000	300	5500	5500	2900	4000	3000	1000	7000

1/ From Alaska Department of Fish and Game, Commercial Fisheries, unpublished data file. 2/ No survey made in years not shown. 3/ Peak count used as season total. * Count of sockeye at mouth of Jackpot River.

** Estimated 500 sockeye at mouth of Jackpot River.

Appendix Table 5. Lake Shrode, No. 476, aerial survey estimate of sockeye salmon by survey date and year^{1/}.

Date	1960 ^{2/}	1961	1962	1963	1964	1965	1966	1967	1969	1970	1971	1972	1973	1974	1976	1977	
6/27		200*															
7/ 6																0	
7/ 7			1000														
7/10									4000								
7/12																200	
7/14											50						
7/15	1000*									200					300		
7/18				300			0	190					50	1500			
7/21											100*						
7/22															500		
7/24													1000				
7/25				500			50										
7/26		2800															
7/28			500														
7/29											50*				200		
8/ 3	4000+								3900							350	
8/ 4				1500													
8/ 6															500		
8/ 9							1500										
8/10	4000		1400													600	
8/14					8000**												
9/15			140														
Est. Season Total	3/	4000	2800	1400	1500	8000	50	1500	4000	3900	200	100	50	1500	500	600	200

1/ From Alaska Department of Fish and Game, Commercial Fisheries, unpublished data file. 2/ No surveys made in years not shown. 3/ Peak count used as season total. * Sockeye estimated below falls. ** Sockeye estimate by Ralph B. Pirtle. W. H. Noerenberg estimated 2400 on this date.

Appendix Table 6. Robe Lake, No. 137, aerial survey estimate of sockeye salmon by survey date and year^{1/}.

Date	1961 ^{2/}	1962	1963	1964	1965	1967	1968	1969	1970	1972	1973	1974	1975	1976	1977
7/ 8		2000										5000	1000		
7/11															
7/13	500		500				9000								3500
7/15															300
7/17				4000	7500			5000			1700				
7/18															3000
7/21									500						
7/22										500			5000		
7/26	800	2100	980	1500			3800								
7/31						500						5000			
8/ 2															1000
8/ 6	1200			1325											
8/11	1550														
8/18	460		100												
9/ 1	1700														
Est. Season															
Total 3/	1700	2100	980	4000	7500	9000	3800	5000	500	5000	1700	5000	1000	1000	3500

Miners Lake, No. 244, aerial survey estimate of sockeye salmon by survey date and year. ^{1/}

Date	1961 ^{2/}	1962	1963	1964	1965		1974
6/29			250				
7/ 8					0		1000
7/25				50			
7/26	500		500				
8/14			4800	3800			
8/25		300					
8/31		1600					
Est. Season							
Total 3/	500	1600	4800	3800	0		1000

^{1/} From Alaska Department of Fish and Game, Commercial Fisheries, unpublished data file. ^{2/} No survey made in years not shown. ^{3/} Peak count used as season total.

Appendix Table 7. Boswell Lake, Boswell Bay, Hinchinbrook Island, aerial and ground survey estimate of sockeye salmon by survey date and year^{1/}.

Date	1960 ^{2/}	1961	1962	1963	1964	1965	1966	1973	1974	1975	1976
7/18								2000			
8/20								400			
8/31		50 ^{4/}									
9/18								100 ^{5/}			
Est. Season Total	<u>3/</u>	50						2000			

Cowpen Lake, No. 242, aerial survey estimate of sockeye salmon by survey date and year. 1/

Date	1960 ^{2/}	1961	1962	1963	1964	1965	1966	1973	1974	1975	1976
7/ 6							2000				
7/ 7		50									
7/ 8								50			
7/26				100					400		
8/16		100			50						
8/31			300								
Est. Season Total	<u>3/</u>	50	100	300	50			2000	400	50	

Esther Pass Lake, No. 300, aerial survey estimate of sockeye salmon by survey date and year. 1/

Date	1960 ^{2/}	1961	1962	1963	1964	1965	1966	1973	1974	1975	1976
6/18				500							
7/15			0					1800		300	
7/22				100					400		
8/ 3										100	
8/ 4				0						200	
Est. Season Total	<u>3/</u>		0	500				1800	400	200	300

San Juan Lake, No. 700, aerial survey estimate of sockeye salmon by survey date and year. 1/

Date	1960 ^{2/}	1961	1962	1963	1964	1965	1966	1973	1974	1975	1976
7/29		500+									
8/ 6					1500+						
8/26							10				
8/28						100					
Est. Season Total	<u>3/</u>	500			1500	100	10				

1/ From Alaska Department of Fish and Game, Commercial Fisheries unpublished data file. 2/ No survey made in years not shown. 3/ Peak count used as season total.

4/ Sockeye observed in upper lake. 5/ Sockeye carcasses observed on ground survey.

APPENDIX B

Daily sockeye salmon weir counts and weir - tower counts from Coghill, Eshamy, and Jackpot Rivers and Shrode Creek by year, by day, and season total.

Appendix Table 8. Daily sockeye salmon weir - tower and weir count from Coghill River, 1961-1963, 1966-1967, 1969-1970, 1973-1977^{1/}.

Date	1961	1962	1963	1966	1967	1969	1970	1973	1974	4/1975	1976	1977
6/ 4	2	<u>2/</u>										
6/ 5	0											
6/ 6	0											
6/ 7	6											
6/ 8	2											
6/ 9	0											<u>0 3/</u>
6/10	4											10
6/11	1											0
6/12	0											0
6/13	3											22
6/14	0											407
6/15	5	<u>3/</u>										594
6/16	141	0										464
6/17	168	4										19
6/18	0	0										5
6/19	18	15	0 <u>3/</u>	0 <u>3/</u>								56
6/20	3	7	0	0				0 <u>3/</u>				1342
6/21	2	49	0	0				1				449
6/22	9	13	0	0				23				665
6/23	161	0	0	0	7 <u>3/</u>	325 <u>3/</u>	4					1250
6/24	14	41	6	11912	8	50	17		12			1111
6/25	72	18	19	1647	44	85	19		4	0 <u>3/</u>		3039
6/26	139	64	71	878	147	538	170		5	0		3708
6/27	37	45	1030	523	121	1182	32		56	0	0 <u>3/</u>	7036
6/28	126	34	290	579	116	1393	69		7	0	459	1710
6/29	187	72	281	1503	340	1287	3862	47	11	0	290	1620
6/30	100	1179	1053	1347	*	156	1690	0	10	0	282	200
7/ 1	238	246	1427	1379	*	55	1175	2	9	0	628	835
7/ 2	717	820	540	625	*	2	773	277	21	0	1073	982
7/ 3	106	836	3401	1299	*	0	51	678	11575	0	363	1516
7/ 4	340	637	455	723	*	0	21	70	6313	0	153	2300
7/ 5	801	272	455	893	*	0	86	769	90	5	1002	404
7/ 6	572	503	621	436	*	0	155	557	184	360	546	262
7/ 7	0	109	357	253	*	0	334	1197	88	5148	721	116
7/ 8	781	819	630	358	230	0	264	6872	104	6998	373	122
7/ 9	428	389	362	245	108		399	2812	132	2760	644	297
7/10	232	*	1203	763	0		52	**	307	2643	493	349
7/11	633	53	780	507	0		304		133	1384	261	415
7/12	1004	2	114**	*	0	**	57		174	1024	365	179
7/13	815	9		286	0		39		58	727	142	70
7/14	305	16		158	0		39		336	3568	303	8**
7/15	159	70			0		22		890	986	147	
7/16	184	31			0		**		410	282	166	
7/17	20	26			0				91	1360	125	
7/18	116	2			**				393	1090	34	
7/19	0	2							150	199	53	
7/20	58	4							155	719	94	
7/21		4							139	509	73	

Appendix Table 8. Daily sockeye salmon weir - tower and weir count from Coghill River, 1961-1963, 1966-1967, 1969-1970, 1973-1977^{1/} (continued).

Date	1961	1962	1963	1966	1967	1969	1970	1973	1974	1975	1976	1977
7/22		6							206	728	74	
7/23		*							261	980	81	
7/24		*								398	10	
7/25		*								318	24	
7/26		**								303	40	
7/27										336	15	
7/28										275	12	
7/29										432	5	
7/30										622	3	
7/31										192	2	
8/ 1										196		**
8/ 2										144		
8/ 3										169**		
Season Total	8709	6397	13095	26314	1121	5073	9658	13281	22334	34885	9056	31562

- 1/ Data from Alaska Department of Fish and Game Commercial Fisheries Annual Management reports.
- 2/ Weir installed and operating on May 28.
- 3/ Weir installed and operating.
- 4/ New standard weir constructed of wooden A - frames and conduit pickets. In years prior to 1974 the weir consisted of wire fencing constructed in a manner to guide fish over a counting panel and counts of salmon were made from a tower. Counts prior to 1974 are incomplete as no attempt was made to obtain total counts.
- * Flooding - no count made.
- ** Weir removed.

Appendix Table 9. Daily sockeye salmon weir counts from Esham River,
1931-1932, 1950-1959^{1/}.

Date	1931	1932	1950 ^{2/}	1951	1952	1953	1954	1955	1956	1957	1958	1959
6/22		1										
6/23		11										
6/24		0										
6/25		35										
6/26		12										
6/27		8										
6/28		23										
6/29		9										
6/30		33				7			0*			
7/ 1		54	31			7	*		0			
7/ 2		8				0	2		0		0*	
7/ 3		0				1	0		0	8*	0	0*
7/ 4		0		0*		8	0		0	35	3	0
7/ 5		13		19		18	0		0	12	106	23
7/ 6		25		178		0	0		0	6	12	11
7/ 7	9	12		108		27	0		0	128	12	2
7/ 8	19	12	2700	21		7	4		0	204	1	9
7/ 9	0	20		0		42	0		0	22	4	3
7/10	3	127		0		0	13		0	36	32	0
7/11	2	154		44	*	3	31		0	18	64	0
7/12	0	179		82		0	0		0	9	11	11
7/13	0	255		58	0	15	0		0	1	113	10
7/14	0	28		91	35	5	0		0	1	3	40
7/15	0	6	895	84	30	4	0		0	782	0	59
7/16	19	3		25	32	1	50		0	3108	2	434
7/17	31	30		68	150	0	48		0	505	0	145
7/18	145	152		15	15	0	9	37	269	0	55	29
7/19	87	19		68	414	0	1	108	1211	2	69	23
7/20	0	170		23	220	1	7	121	694	26	33	18
7/21	0	197		12	226	0	1	97	562	11	15	28
7/22	35	4	2896	64	114	1	7	83	76	0	101	7
7/23	4	22		12	2100	1	0	36	69	101	99	30
7/24	11	36		0	92	0	3	11	678	48	72	8
7/25	72	2		8	350	0	0	5	551	14	135	17
7/26	275	62		2	0	0	6	1	41	2	10	50
7/27	436	70		141	0	0	0	0	97	4	64	98
7/28	456	173		124	1010	0	12	0	151	2	131	26
7/29	343	210	1182	285	860	0	14	3	8	0	67	2
7/30	677	14		297	26	0	0	0	1	0	117	54
7/31	146	502		50	2076	0	34	0	1179	0	148	93
8/ 1	447	156		14	6850	327	25	3	202	146	31	27
8/ 2	1148	173		296	2710	171	18	4	190	2	37	157
8/ 3	1476	58		88	586	180	36	12	218	2	55	39
8/ 4	657	461		4	100	36	5	41	1166	14	118	18
8/ 5	85	7000	1558	1765	155	20	10	404	873	2	68	55
8/ 6	1654	1528		1028	0	1	1	443	1431	3	106	168
8/ 7	316	3073		2347	810	2	2	276	1170	10	158	25
8/ 8	3471	5353		2750	4500	102	2	147	151	11	133	136
8/ 9	3061	2093		4481	25	240	5	311	528	24	88	243
8/10	1621	1137		2170	715	560	14	715	1885	16	139	279
8/11	1212	2801		2140	303	236	24	233	2139	46	101	423
8/12	603	8262	1362	526	1369	83	31	673	1725	24	181	209
8/13	380	3648		76	1520	302	0	431	824	192	146	14
8/14	2608	5777		500	370	368	268	391	2094	195	114	1121

Appendix Table 9. Daily sockeye salmon weir counts from Esham River,
1931-1932, 1950-1959^{1/} (continued).

Date	1931	1932	1950 ^{2/}	1951	1952	1953	1954	1955	1956	1957	1958	1959
8/15	306	4001		725	16	230	7	381	3496	210	226	221
8/16	5425	10461		912	300	386	10	463	1810	254	214	504
8/17	8563	8574		630	0	204	73	265	2633	221	147	714
8/18	11027	8576		285	110	105	48	962	2227	151	127	252
8/19	3133	1833	189	47	151	68	64	690	2214	105	120	149
8/20	1323	6762		522	362	21	18	893	774	338	126	29
8/21	768	14824		612	563	148	46	419	173	10009	67	39
8/22	1122	8838		153	0	81	167	396	169	6577	122	211
8/23	1542	6812		500	280	167	82	271	495	4872	57	196
8/24	2226	14425		300	0	53	151	478	349	3509	111	267
8/25	801	12383		1670	0	58	21	536	1456	1508	33	204
8/26	904	10039	14276	1520	500	70	29	950	1033	484	58	87
8/27	452	13262		3900	0	1	17	621	246	7517	62	278
8/28	222	6535		5108	920	41	1	387	856	3245	55	18*
8/29	320	4719		2643	0	1	0	268	359	1601	44	400*
8/30	112	4410		3250	46	81	2	122	679	1990	39	
8/31	11617	3236		2714	262	1	6	97	435	1200	26	
9/ 1	3429	2551		1206	5000	8	7	73	304	341		**
9/ 2	1837	1903	4048	3000	4000	33	4	42	631	496		
9/ 3	438	3671		8000	1460	4	1	33	236	3526 ^{3/}		
9/ 4	196	1169		2500	327	30	0	31	705	520 ^{3/}		
9/ 5	262	1144		1015	382	21		28	366	150		
9/ 6	226	3475		1000	197			21	159	254		
9/ 7	132	1319		100	217			11	112	201		
9/ 8	142	1843		50	0			9**	143	156		
9/ 9	102	1252	1233	235	3				59	159		
9/10	116	1350			0**					109		
9/11	96	4005			1000***					106		
9/12	86	1750								69		
9/13	70	1729								26		
9/14	41	4340								25		
9/15	36	2630										
9/16	20	2360										
9/17	18	2049										
9/18	18	1630										
9/19	37	1822										
9/20	18	2058										
9/21	215	994										
9/22	14	723										
9/23	8		**									
9/24	9											
9/25	9											
9/26	8											
9/27	3											
9/28	2											
9/29	12											
9/30	8											
Season Total	78980	229668	30370	62661	42859	4588	1437	13033	46697	51308	5224	6908

1/ From 1931-32, and 1950-59, data is from Bureau of Fisheries and Bureau of Commercial Fisheries, Annual Management Reports. 2/ Weekly totals only given in annual reports.

3/ Estimate - high water necessitated opening part of weir. * Weir installed and operating. ** Weir removed. *** Estimated sockeye in lagoon when counting ceased.

Appendix Table 10. Daily sockeye salmon weir counts from Esham River, 1960-1969^{1/}

Date	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
6/20					02/					
6/21					0					
6/22					0			7	1	
6/23			0*		0			0	0	
6/24			13		0			0	0	*
6/25		346	14		0			18	0	0
6/26	23	92	49		0		0*	1	209	0
6/27	17	1174	473		7		0	0	0	0
6/28	3	489	47		0	0*	0	0	0	9
6/29	5	71	146		0	0	0	0	26	38
6/30	2	11	140		1	0	16	0	127	0
7/ 1	341	49	214		0	0	1	287	2	4
7/ 2	118	14	61	33	1	0	0	304	55	0
7/ 3	83	73	15	13*	0	0	0	2	0	32
7/ 4	36	14	10	26	0	0	0	129	1	0
7/ 5	29	1	99	3	4	0	0	20	215	0
7/ 6	394	136	107	29	0	0	15	78	3	249
7/ 7	255	951	46	12	15	0	17	0	0	15
7/ 8	131	30	7	5	92	1	315	0	0	7
7/ 9	541	6	139	1	1103	1	104	8	75	6
7/10	294	88	79	0	19	30	57	4	194	110
7/11	327	308	31	0	11	125	2	0	32	177
7/12	305	372	23	0	25	30	52	0	99	253
7/13	157	52	14	42	171	258	111	0	262	4
7/14	157	40	9	4	499	440	94	0	61	247
7/15	236	48	32	0	88	66	81	2	475	66
7/16	163	49	12	4	67	2	154	0	96	0
7/17	151	32	11	2	354	33	11	3	0	3
7/18	261	1	31	13	96	3	119	0	6	0
7/19	103	108	25	8	65	21	10	0	1	0
7/20	255	452	7	0	232	25	6	0	8	0
7/21	244	374	12	0	529	518	16	12	0	0
7/22	153	63	11	0	322	417	1	10	8	0
7/23	455	18	18	0	18	21	6	0	0	0
7/24	179	225	11	0	217	706	1	0	34	0
7/25	228	45	16	8	72	34	90	11	11	0
7/26	173	2	66	0	79	168	956	0	10	0
7/27	279	444	16	8	491	2210	420	0	0	4
7/28	114	31	11	0	758	1	140	0	1	0
7/29	196	63	9	0	153	496	2	0	2	1094
7/30	142	41	20	0	449	848	950	0	882	362
7/31	165	54	71	0	230	703	936	0	710	3
8/ 1	79	326	10	1	118	1007	46	207	223	11
8/ 2	144	163	4	10	182	47	43	16	1313	4
8/ 3	166	370	2	0	31	14	0	75	976	14
8/ 4	210	212	1	0	207	46	509	1	385	0
8/ 5	65	782	0	7	200	121	48	20	442	1766
8/ 6	64	1013	73	16	91	233	1549	82	1057	33
8/ 7	48	744	1	73	206	0	983	904	830	1
8/ 8	196	515	460	55	292	707	1265	132	84	1
8/ 9	209	5470	60	112	317	7	725	0	399	0
8/10	134	3469	696	21	149	1070	636	419	541	127
8/11	520	1981	66	40	696	670	183	456	1069	115
8/12	656	2726	151	26	1520	173	1773	37	1470	0
8/13	230	1741	65	7	2330	710	115	6	2722	6

Appendix Table 10. Daily sockeye salmon weir counts from Esham River, 1960-1969^{1/}
(continued).

Date	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
8/14	83	2229	154	21	1201	1019	275	5	951	0
8/15	447	2165	87	17	1261	5032	431	36	2725	7
8/16	327	605	144	23	510	3938	378	98	1873	0
8/17	196	496	130	18	1085	6087	269	353	1460	693
8/18	318	206	105	58	1040	530	1	128	1680	138
8/19	243	357	390	81	2835	1768	5261	184	1341	96
8/20	194	755	477	101	2620	803	1298	3112	2333	48
8/21	408	2647	347	34	2258	2907	30	639	12105	53
8/22	301	2737	267	304	5000+	2157	4052	211	7488	49
8/23	305	0	390	281	10000+	1870	195	131	8178	304
8/24	178	0	214	59	2416	2193	491	326	9299	255
8/25	71	398	174	487	3261	1699	232	557	1563	655
8/26	255	591	284	151	2528	2835	44	1260	592	454
8/27	190	1729	384	30	3980	1509	103	81	502	24
8/28	215	4147	199	71	6000+	1144	3	33	47	239
8/29	79	104	210	86	4000+	1571	181	88	32	908
8/30	75	0	238	50	1187	1421	315	80	85	1318
8/31	64	0	190	0	1030	568	112	115	95	309
9/ 1	130**	0	243	0	238	36	9	34	161	495
9/ 2	300***	27	77	137	715	101	137	24	139	129
9/ 3	183	188	262	842	132	29	37	85	977	
9/ 4	35	124	67	276	10	104	11	35	1411	
9/ 5	15	96	121	422	189	30	19	142	634	
9/ 6	72	100	17	103	330	11	8**	20	918	
9/ 7	137	180	2	180	52	0	90***	**	1143	
9/ 8	468	93	3	52	18	7			2943	
9/ 9	418	20	4	183**	1172	16			5761	
9/10	875**	60	11	400***	324	8			19487	
9/11	200***	28	5		12	1			10179	
9/12		26	3		21	12			526	
9/13		45	1		0	0			6162	
9/14		22	5		12385	0			84	
9/15			3**		11918	0			16	
9/16			12***		12725	0**			9	
9/17					4407	10***			11**	
9/18					8008				27***	
9/19					3872					
9/20					1103					
9/21					1068					
9/22					37					
9/23					1					
9/24					26					
9/25					3**					
Season Total	13515	47275	9390	3092	67730	108963	26593	10821	68048	61196

1/ From 1960 - 1969, data is from Alaska Department of Fish and Game, Commercial Fisheries, Annual Management Reports. 2/ Weir in operation on 6/19. * Weir installed and operating. ** Weir removed. *** Estimated sockeye in lagoon when counting ceased.

Appendix Table 11. Daily sockeye salmon weir counts from Esham River, 1970-1977^{1/}

<u>Date</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
6/20				0 ^{2/}	0 ^{3/}	0 ^{4/}	0 ^{5/}	56 ^{7/}
6/21				0	0	0	0	118
6/22	3*			0	0	0	0	82
6/23	0			0	0	0	0	129
6/24	3			0	0	0	0	68
6/25	2			0	0	0	0	32
6/26	16			0	0	0	0	112
6/27	2			0	0	0	0 ^{6/}	191
6/28	0	0*		0	13	0	51	103
6/29	22			0	6	0	0	153
6/30	16			0	0	0	14	223
7/ 1	46			0	44	0	42	56
7/ 2	23			16	21	0	147	63
7/ 3	3			0	3	0	6	15
7/ 4	13			0	3	0	44	70
7/ 5	3		1	0	2	73	131	103
7/ 6	12		900	4	0	1	263	112
7/ 7	8	0*	1724	0	1	2	404	3
7/ 8	19	0	198	1	0	26	538	2
7/ 9	6	0	215	0	0	22	292	19
7/10	6	0	415	1	1	113	0	14
7/11	4	0	88	0	14	105	71	34
7/12	8	0	41	2	1	24	14	5
7/13	8	0	91	19	1	10	1	0
7/14	17	0	1191	0	0	29	16	0
7/15	7	0	4	0	0	5	42	0
7/16	6	0	407	0	1	4	134	4
7/17	9	0	220	0	0	49	38	42
7/18	37	0	288	6	0	8	220	7
7/19	13	0	712	10	0	1	42	5
7/20	14	0	170	8	0	6	240	7
7/21	15	55	0	0	47	15	119	0
7/22	66	4	28	0	11	9	19	19
7/23	30	0	11	2	33	27	29	65
7/24	34	0	87	1	2	0	86	30
7/25	32	94	88	5	3	4	127	76
7/26	25	187	0	4	2	1	37	37
7/27	42	230	0	30	1	4	91	81
7/28	362	15	3	62	4	19	26	76
7/29	11	0	222	0	0	0	18	10
7/30	0	122	26	4	16	203	9	120
7/31	80	0	0	58	23	0	1	3
8/ 1	392	0	0	70	18	17	20	15
8/ 2	32	24	0	3	5	9	14	180
8/ 3	144	0	550	0	1	23	1	104
8/ 4	41	0	77	60	0	42	0	181
8/ 5	18	8	176	2	1	5	274	23
8/ 6	32	15	495	37	6	35	463	115
8/ 7	60	2	802	269	1	16	721	81
8/ 8	214	8	761	41	27	22	207	1036
8/ 9	27	0	578	13	3	29	1731	547
8/10	33	32	520	79	8	27	533	209
8/11	30	3	0	0	8	26	180	669
8/12	89	0	0	110	5	3	733	331
8/13	19	3	0	11	37	159	38	558

Appendix Table 11. Daily sockeye salmon weir counts from Esham River, 1970-1977^{1/}
 (continued).

Date	1970	1971	1972	1973	1974	1975	1976	1977
8/14	508	1	2174	292	39	148	51	382
8/15	358	3	5570	86	20	17	135	910
8/16	518	2	2625	14	1	23	779	391
8/17	1105	0	1215	172	0	31	126	360
8/18	2561	3	150	134	0	19	1831	405
8/19	1193	2	47	76	22	16	1151	303
8/20	512	7	52	72	24	10	2156	144
8/21	153	17	14	218	0	19	681	233
8/22	83	0	300	904	7	13	144	182
8/23	218	48	374	415	0	37	58	377
8/24	142	12	884	276	1	9	356	296
8/25	170	37	666	1071	6	17	832	337
8/26	194	5	118	601	140	45	1710	143
8/27	253	2	33	28	0**	6	526	117
8/28	239	0	4	0		10	134	52
8/29	296	0	40	0		25	171	39
8/30	131	0	772	4		13	111	63
8/31	41	0	572	7		8	15	30
9/ 1	134	3	124	54		14	39	19
9/ 2	102	0	772	2		13	14	15
9/ 3	74	0	78	15		19	22	23
9/ 4	70	0	517	67		9	14	4
9/ 5	48	1	401	38		14	14	2
9/ 6	101	0	141	300		12	12	0
9/ 7	32	3	404	1880		3 ^{8/}	17	104
9/ 8	19	2	0 ^{9/}	652		0 ^{8/}	8	37
9/ 9	22	1	0 ^{9/}	821		0	30	3
9/10	29**	2	7	422		0	0	62
9/11		0	25	326		1	1	22
9/12		0	179	86		0	2	12
9/13		0	0**	52		0	0**	15
9/14		1	35***	189**		0	15***	0**
9/15		0**						
Season Total	11460	954	28683	10202 ^{10/}	633	1724	19367	11746

1/ From 1970 - 1977, data is from Alaska Department of Fish and Game, Commercial Fisheries, Annual Management Reports.

2/ Weir in operation on 6/17.

3/ Weir in operation on 6/19.

4/ Weir in operation on 6/15.

5/ Weir in operation on 6/16.

6/ Hole in weir.

7/ Weir in operation on 6/10. Counts of sockeye from 6/10 to 6/19 were as follows: 6/15 - 20; 6/16 - 57; 6/17 - 35; 6/18 - 11; 6/19 - 147.

8/ Estimated - high water necessitated opening part of weir.

9/ Gate found open.

10/ In addition 889 sockeye captured to transplant to Lower Herring Bay Lake.

* Weir installed and operating.

** Weir removed.

*** Estimated sockeye in lagoon when counting ceased.

Appendix Table 12. Daily sockeye salmon weir counts from Jackpot River, 1932^{1/}.

<u>Date</u>		<u>Date</u>	
7/ 1	3	7/27	47
7/ 2	0	7/28	15
7/ 3	0	7/29	235
7/ 4	6	7/30	469
7/ 5	0	7/31	9
7/ 6	23	8/ 1	13
7/ 7	0	8/ 2	2
7/ 8	68	8/ 3	0
7/ 9	0	8/ 4	161
7/10	0	8/ 5	47
7/11	0	8/ 6	3
7/12	238	8/ 7	42
7/13	52	8/ 8	6
7/14	254	8/ 9	1
7/15	1	8/10	4
7/16	2	8/11	16
7/17	2617	8/12	5
7/18	48	8/13	21
7/19	580	8/14	74
7/20	42	8/15	14
7/21	30	8/16	6
7/22	4	8/17	2
7/23	4	8/18	0
7/24	0	8/19	37
7/25	156	8/20	0
7/26	25	8/21	19 <u>2/</u>

Season	5401
Total	

1/ Data from Bureau of Fisheries, Annual Management Report.

2/ Weir count continued through September 3 with no sockeye counted after August 21.

Appendix Table 13. Daily sockeye salmon weir counts from Shrode Creek, 1963-1975^{1/}.

Date	1963	1968	1969	1970	1972	1973	1975
7/17		16*					
7/18		18					
7/19		260					
7/20		277		7*			
7/21		256	3 3/*	3			
7/22		263	8	0	77*		
7/23		342	14	53	97		
7/24		154	12	3	228		
7/25		454	21	3	142		
7/26	671*	328	12	6	86		
7/27	1036	398	8	47	14		
7/28	2382	143	7	23	31		
7/29	1945	129	38	1	1094		
7/30	1385	704	10	21	850		
7/31	0	737	0	0	480		
8/ 1	1230	55	0	0	309	30*	
8/ 2	1442	48	8	0	298	10	
8/ 3	0	25	3	58	346	0	
8/ 4	0	138	0	3	70	43	
8/ 5	0	409	3	0	4	90	
8/ 6	0	315	2	12	7	137	
8/ 7	1438	437	0	36	3	28	*
8/ 8	1940	266	0	6	0	3	4
8/ 9	0	117	0	48	27	47	9
8/10	771	101	0	3	19	26	11
8/11	680**	683	0	15	15	58	1
8/12		239**	0	53	13	89	0
8/13			0	17	11	0	**
8/14			0	124	2	0	
8/15			0	33	0	0	
8/16			46	37	0	**	
8/17			22	135	0		
8/18			27	0	12		
8/19			7	0	6		
8/20			11	0	30		
8/21			0	0	15		
8/22			17	0	24		
8/23			0	60**	15		
8/24			29		15		
8/25			7		10		
8/26			0		5**		
8/27			18				
8/28			31				
8/29			97				
8/30			34				
8/31			19				

Appendix Table 13. Daily sockeye salmon weir counts from Shrode Creek, 1963-
1975^{1/} (continued).

Date	1963	1968	1969	1970	1972	1973	1975
9/ 1			4				
9/ 2			0				
9/ 3			0				
9/ 4			0				
9/ 5			0				
9/ 6			0				
9/ 7			**				
Season Total	14920	<u>2/</u>	7312	518	807	<u>2/</u>	4355
							561
							25

1/ Data from Alaska Department of Fish and Game Commercial Fisheries unpublished data file.

2/ Species separation questionable? Sockeye totals probably less than total shown.

3/ A total of 1,000 sockeye estimated to be in Lake Shrode when counting started.

* Weir count began.

** Weir count terminated.

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